

# **SWE Philadelphia Section**

## ***Inside this Issue:***

- President's Letter
- May Meeting Information
- Scholarship Recipients
- Science Fair Winners
- Moorestown Project
- Career Guidance Activities

## ***Editor's Note:***

June newsletter deadline is **May 20<sup>th</sup>**.  
Please send articles to: [V.Land@swe.org](mailto:V.Land@swe.org)

## ***See you at the Lamb Tavern May 19<sup>th</sup>!***

865 W. Springfield Road  
Exit 3 (Rt. 1) off Rt. 476  
North on Rt. 1  
Left on Springfield Road  
Tavern is on right

Cost is \$25.00 for members  
\$10.00 for students  
RSVP to Carole Stowell  
by May 17<sup>th</sup>.

This newsletter's mailing courtesy of National Career Centers. Copying funded by Lockheed Martin Management and Data Systems. *Thank you!*

**SWE Philadelphia Section  
C/O Engineer's Club  
Suite 36  
215 South 16<sup>th</sup> Street  
Philadelphia, PA 19102**

ADDRESS CORRECTION REQUESTED

**Visit our webpage at: <http://www.libertynet.org/~sweps>**



# **Society of Women Engineers Philadelphia Section May 1998**

## ***Letter from the President, Janet Anderson***

I'm really excited about our May speaker. Dr. Ruth David is Deputy Director for Science and Technology for the Central Intelligence Agency. Dr. David is coming up from Washington, D.C. to talk with us about her work and career on May 17th. We'd really like a big crowd at our concluding full section meeting of the year. Some SWE members from the Lehigh Valley Section will be joining us. Please extend an invitation to engineering students who are home from school to attend this meeting. Students pay only \$10!

Just a quick reminder . . . . There will be a board meeting (open to anyone) beginning at 5 pm before the dinner meeting. I hope we can set the date of the annual summer planning meeting then. This planning meeting is open to anyone interested in attending and we use it to select the theme and speakers for the coming year.

The last meetings of the Philadelphia section for this year will be the sub-group meetings in June. I hope you can attend at least one (Center City Philadelphia, Delaware, King of Prussia, Lancaster/Reading/Harrisburg). Remember -- we're trying to make it easier for folks to attend section activities by making them closer to *home!* And, these meetings are smaller, making it easier to network and to get to know one another. If you have any ideas, I'm sure the coordinators welcome suggestions (Sue Sciaratta, Jennifer Wetzel, Danette Ernst, and Janet Anderson).

Congratulations to our scholarship winners and the winners at the Delaware Valley Science Fair. Thanks to all who help to select the winners and help them on their way to being future engineers and scientists: Julianne Gadsby, Susan Giglio-Tos, Barb Faust, Maggie Schwartz, Sue Sciaratta, Carole Stowell, Lisa Walton.

Throughout the newsletter are reports on various programs (ours and others working to support math and science education). Some of these can use your help. Many only need a couple of hours of time. Please help if you can. Please spread the word about upcoming programs to those who might benefit from them.

For those who might be job hunting, remember to check our web page, our Job Bank Coordinator (Lisa Hutchings), and the National Career Centers Job Fair on June 15th.

Thanks to the National Career Centers for mailing our newsletter.

A really early notice . . . . The fall regional Student Conference (which also includes SWE Leadership Workshops for members) will be held on October 30, 31 and November 1, 1998, at Rutgers in New Brunswick, NJ.

# **SWE Philadelphia Section**

**May 1998**

***Our guest speaker on May 19<sup>th</sup> will be:***

***Dr. Ruth A. David, Deputy Director for Science and Technology for the Central Intelligence Agency***

Dr. Ruth A. David was appointed Deputy Director for Science and Technology on 31 July 1995, and assumed responsibility on 15 September 1995. Dr. David serves as a science and technical advisor to the Director of Central Intelligence with oversight responsibilities for supporting and improving the collection, processing, analysis, and dissemination of intelligence through research, development and application of technology.

Previously, Dr. David served in several managerial positions at the Sandia National Laboratories. Most recently she served as Director of Advanced Information Technologies. In this role, she led a lab-wide effort to leverage and nurture Sandia's differentiating expertise in a broad spectrum of advanced information technologies. In 1991, Dr. David was Director of the Development Testing Center which developed and operated a wide range of full-scale engineering test facilities that supplied special environments to enable the validation of analytical models and verify system functionality. In 1989, she served as Manager of the Non-Destructive Test, Electromagnetic Test and Optics Department. There she initiated activities that led to ongoing support of the FAA's Aging Aircraft Research Program. In 1986, she served as Supervisor of the Data Systems Development Organization. Primary organizational responsibilities included the development of an automated, remotely controllable, digital data acquisition system for deployment of underground nuclear effects tests at the Nevada Test Site.

Dr. David's technical experience has included digital and microprocessor-based system design, digital signal analysis, adaptive signal analysis, and system integration.

Dr. David has published numerous technical papers and co-authored three technical reference texts in digital signal processing. She has taught graduate level courses as an adjunct professor in the Electrical Engineering Department at the University of New Mexico.

She earned a BSEE degree at Wichita State University in 1975 and attended Stanford University, where she earned Master of Science and Doctorate degrees, both in Electrical Engineering. She is a member of Tau Beta Pi and Eta Kappa Nu and is past president of the Albuquerque chapter of IEEE.

Dr. David is a native of Arkansas City, Kansas. She is married to Stanley E. Dains, and has one step-daughter, Cynthia. She and her husband reside in McLean, Virginia.

## ***SWE Executive Director to Retire***

***by Gloria Montano***

Elaine Osterman has decided to retire effective 6/30/98. Between now and the end of the fiscal year, Elaine's priorities will be to complete staff preparations for convention, to ensure smooth day-to-day operations, to attend the BOD4 meeting and to attend Convention in Houston. Any other major activity will be deferred or delegated to others if necessary.

An ad-hoc committee to conduct a search for a new Executive Director has been established. The Chair of the Search Committee is Peggy Layne, FY97 President, and the committee reports to Roberta Banaszak Gleiter, FY98 President Elect. Peggy will provide Search Committee updates in the future. Any questions or comments for the Search Committee can be sent to [peggy.layne@swe.org](mailto:peggy.layne@swe.org). It has been an honor to have served on the Board with Elaine over the past five years. The Society has greatly benefited from Elaine's insight, perseverance and professionalism. Please join me in wishing her a fulfilling retirement.

# **SWE Philadelphia Section**

**May 1998**

## ***CAREER GUIDANCE ACTIVITIES***

### ***Container Design Project Review Board***

Archbishop Ryan High School  
May 26, 1998 - 12 Noon

The Review Board participants listen to and evaluate each of the student proposals for a practical container suitable for a specific product of their choice. Contact Barb Faust at (610) 354-1100 for more information on how to be a volunteer.

### ***Family Day at the Crayola Factory***

May 16, 1998

Contact Michele Groen from the New Jersey SWE Section at (908) 771-1291 for tour time, location, and directions

Cost \$9.00

### ***Math Options '98***

A Math & Science Career Day will be held on Friday, May 15 and Friday, May 29 from 8:15 AM to 2:30 PM at Penn State Delaware County in Media, PA.

Penn State Delaware County and the Philadelphia Region of Women and Mathematics will host Math Options '98 for seventh grade girls from local school districts. A day of "real world" workshops exploring math, science, and engineering topics for students. Lunch, career fair, and a keynote panel are included. Cost is \$9.00 per student for registration, lunch, and materials. Teachers are asked to send a written request on school letterhead for a registration packet. State whether your school is able to participate on either date. Space is limited.

Contact Terry Devlin (610) 892-1331 to register. For Math Options Career Days at Penn State Abington, contact Donna Sobiech (215) 881-7551 or more details.

### ***Science in the Summer***

SmithKline Beecham is sponsoring a program called "Science in the Summer". It is run through the public libraries in Norristown (Montgomery County) and the Free Library of Philadelphia. Sessions are held for grades 1-3 and 4-6, separately. There are separate courses in chemistry, bioscience, physical science, aerospace, oceanography, paleontology, electricity, and dream (simple) machines. Each child takes part in four 45-minute workshop sessions in a week.

SmithKline Beecham contracts with the AAAS (American Association for the Advancement of Science) to run the course. The contact there is Steve Grant, 800-351-7542. Mrs. Schaeffer from the Norristown Public Library (610-278-5100) said registration begins in May and at some libraries there is such a demand that students are chosen by a lottery. For more information, check your local library.

# SWE Philadelphia Section

May 1998

## MOORESTOWN PROJECT

On Saturday morning, April 4th, the team of Patricia Noonan, Fran Shore, and Nancy Hunley participated in the Moorestown (NJ) Middle School Math and Science Day. Two cafeteria tables were used to set up a SWE backdrop and the four MacIntosh computers donated by Lockheed Martin. CD ROM's entitled the Engineering Adventure, purchased recently by the Section, were used to inform students and parents about careers in the different fields of engineering and about school preparation required to enter college level study. The CD's contain brief exercises selecting parameters to solve an engineering problem; these were enthusiastically received by the female, as well as the male students, were eager to participate. The activities include selecting the correct velocity to land a rocket on the moon, correctly sequencing a factory line to assemble a boom box, selecting the right materials for a rocket nose cone to survive re-entry, and selecting the appropriate water treatment to avert a mutation of a fish population. We estimate approximately thirty students viewed the material in depth.

The Moorestown school was selected as a test site because of the interest by faculty. Future plans of the committee include visiting two more schools and developing a plan for circulating the CD's and training material. At least two of the computers need to be upgraded.

## CERTIFICATES OF MERIT

As of 22 April, 62 schools have sent in their Certificate of Merit nominations. Presenters are needed for the following schools:

- Souderton Area High School, Souderton, PA June 2, 7:30 pm
- Pottstown Senior High School, Pottstown, PA May 11, 9:00 am
- Middletown High School, Middletown, DE May 29, 8:30 am
- Villa Joseph Marie High School, Holland, PA May 28, 8:45 am
- Phoenixville Area High School, Phoenixville, PA May 19, 7:30 pm
- Upper Darby High School, Upper Darby, PA

If you are interested in presenting the Certificates of Merit to students at any of these schools (or possibly at others that have yet to respond), please contact Barb Faust (610) 354-1100. Depending on the school, participation time could range anywhere from less than an hour to more than two hours

## MULTIMEDIA TECHNOLOGY AND SYSTEMS: LEARN WHAT MAKES MULTIMEDIA TICK

A Seminar Sponsored by the Delaware Bay IEEE Computer Society

How are still and moving images compressed? What are the transmission choices? ISDN? ATM? Digital Subscriber Lines? Cable modems? Wireless? Use of TV instead of PC? Direct TV? Telco vs. Cable vs. Satellite? Convergence of computing, communications, entertainment?

Dr. Julie Frank, the instructor, is a technology and patent consultant and an Adjunct Professor in the graduate electrical engineering program at Widener University. She is a 35-year veteran of industry with R&D and management experience with Bell Labs (retired), RCA, FIT, New York Telephone, Wall Street, and nine years in academe.

She is the sole patentee of seven patents in image coding, satellites, and information processing. At Bell Labs, she received the Distinguished Member of Technical Staff Award for Sustained Achievement. One of her image coding methods was (1) used throughout Bell System for coding Yellow Page Graphics and (2) proposed by AT&T to the CCITT as a standard for facsimile coding.

DATE: Saturday, May 30, 1998  
TIME: 9:00 AM to 3:00 PM  
LOCATION: Widener University  
University Center, Room A  
COST: \$50 IEEE Members  
\$60 Non members  
LUNCH: \$6

To register, send name, address, phone number & e-mail address to: Barb Zubenko, 32 Somerset Lane, Newark, DE 19711 Make checks payable to: "IEEE, Delaware Bay Section." Write IEEE Membership # on check.

# SWE Philadelphia Section

May 1998

## CONGRATULATIONS!

### SCHOLARSHIP RECIPIENTS

On April 21st, the Scholarship Committee awarded six \$1,000 scholarships to local college students. The recipients were:

**Julie Herman**, Junior, University of Pennsylvania - Conectiv Scholarship

**Sarah Winnacker**, Sophomore, University of Pennsylvania - Rohm and Haas Scholarship

**Kristy Sundjaja**, Junior, University of Pennsylvania - Trigen Scholarship

**Donna Charland**, Freshman, Drexel University - Merck Scholarship

**Dipa Patel**, Sophomore, University of Delaware - Merck Scholarship

**Elizabeth Glancey**, Junior, Widener University - Bell Atlantic Mobile Scholarship

### SCIENCE FAIR WINNERS

SWE recognized twelve outstanding middle and senior high school students at the Delaware Valley Science Fairs held in Fort Washington, PA on 8-9 April 1998. Maggie Schwartz, Barb Faust, and Lisa Walton (now of Lehigh Valley Section) served as SWE judges. The students and their projects are:

**Gretchen Kubiak**, Senior, Wildwood Catholic High School, Wildwood, NJ  
*Truths of the Javelin*

**Marisa Adelman**, Junior, Abington Friends School, Jenkintown, PA  
*The Development of an Upper Extremity Transradial Prosthetic*

**Abby Perkiss**, Junior, Cheltenham High School, Wyncote, PA  
*Invention of a New Swimming Paddle*

**Sophia Riley**, Junior, Gratz High School, Philadelphia, PA  
*Development of a Laser-Based Method for the Turbidimetric Analysis of Sulfate in Water*

**Courtney Wirth**, Junior, Triton High School, Runnemede, NJ

*The Effect of Tilt on Solar Panels*

**Olga Dvornikova**, Sophomore, Ridley High School, Folsom, PA  
*The Influence of Moisture on the Effectiveness of Insulation*

**Charissa Reuther**, Sophomore, Christian Liberty Academy, Mt. Holly, NJ  
*Which Brand of Film Produces the Most Accurate Color?*

**Kelly Robins**, Freshman, New Hope Solebury High School, New Hope, PA  
*Wind Tunnel*

**Renee Robert**, Freshman, Eyer Jr High School, Macungie, PA  
*What PA Wood Is Best for Building Construction?*

**Candice Twilley**, Freshman, Cardinal O'Hara High School, Springfield, PA  
*Paper! Paper! Let It Burn! Can Paper be Recycled into a Viable Fuel?*

**Anne Stilwell**, Elementary, Logan Township Elementary, Swedesboro, NJ  
*How does the Thermal Conductivity of Homemade and Commercial Insulators Compare?*

**Jacqueline Marion**, Elementary, St Agnes Elementary School, West Chester, PA,  
*Wind Power*

If anyone is interested in mentoring any of these students, please contact Barb Faust for additional details. These are all good kids.

Barb Faust, Lisa Walton (Lehigh Valley), and Kathy Kinsley (Lehigh Valley) served as SWE judges for the Lehigh Valley Science Fair held in Bethlehem on 21 March. At least one of the SWE awardees was selected to advance to the Delaware Valley competition. Students from the Delaware Valley Fairs are selected to participate in the International Science Fair. Next year the International Science Fair will be held in Philadelphia. Efforts are in progress to have a SWE award presented. More details will be forthcoming as events unfold.

# **SWE Philadelphia Section**

**May 1998**

## **MOTHER AND UNDERSTANDING COMPUTERS**

For years I badgered my mother with questions about whether Santa Claus is a real person or not. Her answer was always "Well, you asked for the presents and they came, didn't they?" I finally understood the full meaning of her reply when I heard the definition of a virtual device:

"A software or hardware entity which responds to commands in a manner indistinguishable from the real device." Mother was telling me that

Santa Claus is a virtual person (simulated by loving parents) who responds to requests from children in a manner indistinguishable from the real saint.

Mother also taught the IF ... THEN ... ELSE structure: "If it's snowing, then put your boots on before you go to school; otherwise just wear your shoes."

Mother explained the difference between batch and transaction processing: "We'll wash the white clothes when we get enough of them to make a load, but we'll wash these socks out right now by hand because you'll need them this afternoon."

Mother taught me about linked lists. Once, for a birthday party, she laid out a treasure hunt of ten hidden clues, with each clue telling where to find the next one, and the last one leading to the treasure. She then gave us the first clue.

Mother understood about parity errors. When she counted socks after doing the laundry, she expected to find an even number and groaned when only one sock of a pair emerged from the washing machine. Later she applied the principles of redundancy engineering to this problem by buying our socks three identical pairs at a time. This greatly increased the odds of being able to come up with at least one matching pair.

Mother had all of us children write then mailed in a single envelope with a single stamp. This was obviously an instance of blocking records in order to save money by reducing the number of physical I/O operations.

Mother used flags to help her manage the housework. Whenever she turned on the stove, she put a potholder on top of her purse to remind herself to turn it off again before leaving the house.

Mother knew about devices which raise an interrupt signal to be serviced when they have completed any operation. She had a whistling teakettle.

Mother understood about LIFO ordering. In my lunch bag she put the dessert on the bottom, the sandwich in the middle, and the napkin on top so that things would come out in the right order at lunchtime.

There is an old story that God knew He couldn't be physically present everywhere at once, to show His love for His people, and so He created mothers. That is the difference between centralized and distributed processing. As any kid who's ever misbehaved at a neighbor's house finds out, all the mothers in the neighborhood talk to each other. That's a local area network of distributed processors that can't be beat.

Mom, you were the best computer teacher I ever had.

**HAPPY MOTHER'S DAY !**

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### **ADVERTISING RATES**

Quarter page - \$35  
Half page - \$70  
Whole page - \$135

To place an advertisement in the newsletter, please contact Vicki Land at (302) 453-3349 before the June Newsletter deadline 5/20/98.

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### **SWE-PHILADELPHIA BOARD MEETING**

**MAY 19, 1998**

**5:00 – 6:00 PM**

**at the Lamb Tavern**

**All members are  
invited to attend**

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